

ASHRAE/USGBC/IESNA Standard 189.1P, Standard for High-Performance Green Buildings Except Low-Rise Residential Buildings - Draft Review and Summary

Overview

189.1P is a standard intended for adoption into building codes. The standard applies to all buildings except low-rise residential buildings. It is written in code language and is not a design guide or a rating system. Each chapter contains mandatory, prescriptive, and performance provisions. Users must comply with mandatory and either prescriptive or performance unless otherwise noted. The final standard will not be available until spring, no exact date is available.

Per ASHRAE, 189.1P is

- intended to fix a problem with existing rating systems - that few provisions are mandatory.
- intended to complement green building rating systems.
- equivalent to 30% better than ASHRAE 90.1-2007.
- equivalent to a high LEED silver building

Chapters 1 through 4:

Define purpose, scope, definitions, abbreviations, administration, and enforcement.

Chapter 5 - Site Sustainability

5.3.1 (M) Site Selection. Greenfield sites are allowed if site is within ½ mile of : 1.) developed residential land 2.) 10 basic services, or 3.) commuter rail, light rail, or subway station or ¼ mile from transit service. Prohibited sites: flood prone, within 50' of fish and wildlife habitat, 25' of a wetland. 75'

5.3.2.1(M) Site Hardscape—shading, reflective paving, porous pavers

5.2.2.2 (M) Walls—30% of E. and W. walls or SRI > 29

5.3.2.3 (M) Roofs—75% to be initial SRI 78 for low-slope and Energy Star Roof Product Reqs.

5.3.3.1 (M) Outdoor Lighting Trespass Limits

5.4.1.2 (PS) Pervious Area of 40% unless rainfall is captured and reused, retain 20% of native plants on greenfield sites.

5.5.1 (PF) If existing building, manage 20% of annual rainfall on development footprint through infiltration, reuse, or evapotranspiration OR 40% if new building on greyfield site

LEED points achieved – SS1: 1pt. SS 2 or SS 4.1: 5 or 6 pt. SS 5.1 (incomplete) + SS 6.1: 1 pt. SS 7.1: 1pt. SS 7.2: 1pt. SS 8 : 1 pt (less stringent). TOTAL = 10-11 points

Chapter 6 - Water Efficiency

Contains requirements for site water (irrigation) and building water usage. Mandatory provisions require low flow fixtures and appliances, and baseline irrigation performance. Prescriptive provisions include additional irrigation requirements, cooling tower restrictions, and special flow restrictions for commercial food service facilities, medical and lab facilities, water features, pools, and spas. Performance provisions are based on site water and building water usage.

LEED points achieved – WE 1.1: 2 pts. WE 3.1: 2 pts. WE 3.2: 1-2 pts. TOTAL = 5-6 points.

Chapter 7 - Energy Efficiency

Contains requires for building envelope and systems. Mandatory provisions require 1.0% on-site renewable energy and metering / data collection. Prescriptive provisions include incremental improvements over the ASHRAE 90.1 guideline for envelope, HVAC, water heating, power, and lighting. Also requires ENERGY STAR labeled for all applicable appliances. Performance

provisions are based on annual energy cost, total carbon dioxide emissions, and building electrical demand.

LEED points achieved – EA 1: 9+ pts. EA 2: 1 pt. TOTAL = 10+ points.

Chapter 8 - Indoor Environmental Quality

Mandatory provisions contain requirements for outside air ventilation, carbon dioxide monitoring, HVAC filtration and thermal comfort, contaminant control, acoustics, smoking (no indoor smoking) and top daylighting. Prescriptive provisions require side daylighting, window shading, low emitting finishes and floor coverings. Performance provisions are based on daylight simulations and low emitting material model.

LEED points achieved: EQ CR 1: 1 pt. CR 2: 1 pt for office or classroom buildings. CR 4.1, 4.2, 4.3, 4.4: 4 pts. CR 5: 1 pt. CR 7.1: 1pt. CR 8.1: 1 pt. CR 8.2: maybe TOTAL = 8-10 points.

Chapter 9 - Building Impact on the Atmosphere, Materials and Resources

9.3.1 (M) Construction Waste Management – 50% diverted

9.3.2 (M) Wood. No endangered species unless trade conforms to CITES.

9.3.3 (M) Refrigerants with a maximum contribution to ozone depletion and global warming potential set.

9.4.1 (PS) Reduce Impact of Materials – 1 of the following: recycled content 10%, regional materials 15%, biobased products 5% which can include wood

9.5.1 (PF) Life cycle assessment of two building alternative using ISO 14044

LEED points achieved – MR 2.1: 1 pt. EA 4: 2 pt. MR 4.1, MR 5.1 or MR 6: 1 pt. TOTAL = 4 pts.

Chapter 10 - Construction & Operation Plans

Including commissioning process, building acceptance testing, measurement & verification, energy use reporting, durability, transportation management, erosion and sedimentation control, construction, and IAQ.

10.3.1 (M) Building Project Commissioning >5,000 SF—enhanced commissioning.

10.3.2 Building Acceptance Testing <5,000 SF—basic commissioning

10.3.3 (M) Measurement & Verification Plan for shade trees after 5 years, water use using metering and submetering 12-month measurement, energy efficiency with a benchmark based on the CBECS or an energy model. CBECS path: If not in the top 8% of CBECS, a CxA is to be retained. Repeat every 3 years. Energy Simulation path: compare energy use to that predicted with the model. Document the measured energy efficiency.

10.3.3.4 (M) Indoor Environmental Quality Management Plan for regular monitoring after construction to monitor CO2 levels.

10.3.3.4 (M) Energy Use Reporting—enter energy use into Portfolio Manager every 3 years

10.3.5 (M) Service Life Plan, estimate to what extent structure, envelope, and hardscape will need to be repaired/replaced over the building service life (25 or 50 years for medium or long life).

10.3.6 Transportation Management Plan - owner offers to pay \$30/month for employee transportation alternatives + 3 out of 28 benefit options + other mandatory transportation strategies: Emergency Ride Home, central contact for commuter benefits, promotion of the benefits, and commitment to minimum of 14% of employees not driving to work alone.

10.3.7 (M) Erosion and Sedimentation Control Plan

10.3.8 IAQ Construction Management Plan

LEED points achieved – EA PR 1 and EA 3: 2 pt. EA 5: 3 pt. ID 1 for Service Life Plan: 1 pt. ID 2 for Transportation Management Plan: 1 pt. EQ 3.1 & 3.2: 2 pts. TOTAL = 9 pts.

189.1 LEED POINT TOTAL = 46-50 (Certified 40-49, Silver 50-59).